Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Public Safety and Homeland Security Workshop	)	DA 13-1873
Requested Comments to Topics	)	

REPLY COMMENTS OF NEXGEN GLOBAL TECHNOLOGIES, LLC

NexGen Global Technologies, LLC ("NexGen") submits these reply comments in response to the Commission's Public Notice in the aforementioned docket.

BRIEF OVERVIEW OF NEXGEN: NexGen has developed products and technologies for real time transmission of photos, videos and text for First Responder purposes. NexGen's solution is a complement to text-to-911, and has the capability to accelerate and scale NG-911 services, with features and functionalities that can enhance public safety.

NexGen's MMES (Multimedia Emergency Services) technology is a hybrid SMS//MMS/IP-cloud based solution. It can be deployed by PSAPs now, irrespective of whether the existing infrastructure is analog or digital.

NexGen's system is a an IP-based cloud technology, which allows a cell phone user who calls and speaks to a 9-1-1 operator, to send in a photo, video and accompanying text to the Emergency Communications Center (from his/her mobile phone). Once the photo or video and accompanying text is received, the 9-1-1 operator is able to immediately forward the photo or video and accompanying text (that may contain pertinent biographical information such as height, weight or description), to all First

Responder personnel listed for distribution in the NexGen Multimedia Incident Retrieval System (MIRS) control panel -- all in real time.

No special software is needed by the Communications Center and no cell phone app is required for the sender's cell phone. Cell phone callers who call 9-1-1 can use any wireless carrier or cellular enabled wireless device. The technology interconnects across all wireless networks, cell phones and cellular enabled wireless devices, and as a stand-alone system, easily integrates into any existing Communication Center without the cost of IT hardware, software or infrastructure changes or additions. The system can be easily installed and all personnel trained on its use within one hour.

NexGen is also adding to its MIRS architecture the ability to obtain the longitude / latitude (X/Y) location information of cell phones in communication with its MIRS.

NEXGEN'S REPLY TO PERTINENT TOPICS:

The first topic in Public Notice DA 13-1873 which Nexgen would like to comment on is as follows:

1. **Is currently available location technology able to deliver more precise location information than the Commission's current E911 rules require?**

   Current location technology can provide more precise location information by adapting the GPS Precision Positioning Service (PPS) Performance Standard or GPS Wide Area Augmentation System (WAAS) Performance Standard over the GPS Standard Positioning Service Performance Standard or simply through the incorporation of augmentation. Although augmentation is not inherently part of GPS, the addition of augmentation technology will aid accuracy, integrity, availability and improve position, navigation and timing.

   Augmentation will expand and strengthen the resiliency of GPS and can also allow for ionospheric correction. This technique reduces radio degradation caused by the Earth's atmosphere. With less degradation, more precise location information can be obtained.

a. What is the potential for current technology to provide vertical location (z-axis) as well as horizontal location (x- and y-axis)?

Though existing GPS technology allows for providing the z-axis (or elevation) coordinates, the inherent issue of accuracy exists due to a number of reasons. Some of these reasons are poor satellite reception due to atmospheric conditions or the cell phone being inside a building or even amidst tall buildings in an urban environment, etc. All of these reasons will most likely result in inaccurate range measurement to the satellites resulting in inaccurate (x-y-z) location information.

Since almost any calibrated altimeter will be more accurate at reading altitude than GPS, the incorporation of altimeter technology into cell phones will provide more accurate z-axis location information than will a GPS provided reading at this stage in the evolution of GPS technology.

b. What is the potential for future location technology to improve accuracy performance, particularly as providers deploy 4G networks and increase the use of small cells and other advanced infrastructure?

There are different technical viewpoints regarding what impact the expansion of the 4G networks will have on GPS signal degradation, if any. Should signal interference become an issue then there exist the potential of seriously limiting GPS reception that may cause from limited to wide spread GPS jamming. If jamming does in fact become widespread then vast areas of the U.S. can potentially be deprived of GPS coverage due to total or partial loss of fix.

Should signal jamming and the loss of fix referenced above not become an issue as expansion of the 4G networks and use of small cells increases, then the increase of the 4G networks has the potential for improved accuracy performance as providers deploy additional 4G networks and small cells throughout the USA.

In order to accomplish improved GPS accuracy performance aligned with the increased deployment of 4G networks, there will need to be a concerted effort by the cellular service providers and the cell phone equipment manufacturers where the manufacturers will need to ensure that the appropriate software is pre-installed on the cell phones they manufacture and the carrier networks will need to ensure they support the cell phone's GPS related software.

The implementation of standards in this area will ensure that the cell phones are equipped with the appropriate software supported by the carrier networks if this hybrid method of software and network is how this technology continues to evolve.

Other issues that should be addressed are those of enhanced GPS network security, resistance to jamming, time to lock in s GPS signal and if the method of cell tower triangulation will be kept as a backup means for obtaining location information.

Respectfully submitted,

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